

removing or inactivating step.

2. A method of analysis of DNA sequence according to Claim 1, wherein the pyrophosphates and/or the apyrase is immobilized on a solid.
3. A method of analysis of DNA sequence, comprising steps of:
  - adding pyrophosphates to one or more solutions each containing a different deoxynucleotide, or an analogue of the deoxynucleotide thereby degrading pyrophosphoric acid contained in the solutions;
  - removing or inactivating the pyrophosphates and/or the apyrase in the solutions after the step of degrading after the adding step;
  - extending a DNA primer hybridized to a target nucleic acid via a complementary binding, by using DNA polymerase and at least one of the solutions; and
  - detecting pyrophosphoric acid generated during an extension reaction by chemiluminescence-reaction after the removing or inactivating step.
4. A method of analysis of DNA sequence comprising steps of:
  - adding pyrophosphates to one or more solutions each containing a different deoxynucleotide, or an analogue of the deoxynucleotide thereby degrading pyrophosphoric acid contained in the solutions;
  - removing or inactivating the pyrophosphates and/or the apyrase in the solutions after the step of degrading after the adding step;
  - extending a DNA primer hybridized to a target nucleic acid via a complementary binding, by using DNA polymerase and at least one of the solutions and converting pyrophosphoric acid, generated during the extension reaction, into adenosine 5'-triphosphate in presence of adenosine 5'-phosphosulfate and ATP sulfurylase; and
  - detecting luminescence caused by chemiluminescence-reaction using the adenosine 5'-triphosphate, a luminescence-enzyme and a luminescence substrate after the removing or inactivating step.
6. A method of analysis of DNA sequence according to Claim 4, wherein the step of adding the pyrophosphates comprises a step of adding the pyrophosphates to at least one of

the solutions containing the DNA-primer, the DNA-polymerase, the luminescence-enzyme, the luminescence-substrate, the adenosine 5' – phosphosulfate, or the ATP-sulfurylase, thereby degrading the pyrophosphoric acid contained therein, and/or adding apyrase to degrade at least one of the solutions containing the adenosine 5' – phosphosulfate.

7. A method of analysis of DNA sequence according to Claim 6, further comprising a step of removing or inactivating the pyrophosphates and/or the apyrase added in said at least one of the solutions.
8. A method of analysis of DNA sequence according to Claim 7, wherein the pyrophosphates and/or the apyrase is immobilized on a solid.
9. A method of analysis of DNA sequence according to Claim 4, wherein a base at the 3' terminus of the primer is complementary to one base located next to a single nucleotide polymorphism at one side of a 3' terminus in the target nucleic acid.
10. A method of analysis of DNA sequence according to Claim 4, wherein a second or third base from the 3' terminus of the DNA primer is substituted with a base not complementary to one base sequence of the target nucleic acid.
11. A method of analysis of DNA sequence, comprising steps of:
  - a first step of adding pyrophosphates to each of a solution containing deoxyadenosine 5'- $\alpha$ -thiotriphosphate, a solution containing deoxythymidine 5'-triphosphate, a solution containing deoxyguanosine 5'-triphosphate and a solution containing deoxycytidine 5'-triphosphate, thereby degrading pyrophosphoric acid contained in each of the solutions;
  - a second step of removing or inactivating the pyrophosphates in each of the solutions;
  - a third step of extending a DNA primer hybridized to a target nucleic acid via a complementary binding, by using DNA polymerase and at least one of the solutions obtained in said second step, converting pyrophosphoric acid generated during the

extension reaction into adenosine 5'-triphosphate in presence of adenosine 5'-phosphosulfate and ATP sulfurylase; and

a fourth step of detecting luminescence caused by chemiluminescence-reaction using the adenosine 5'-triphosphate, luciferase and luciferin after the second step.

12. A method of analysis of DNA sequence, comprising steps of:

a first step of adding pyrophosphates to a solution containing deoxyadenosine 5'- $\alpha$ -thiotriphosphate, deoxythymidine 5'-triphosphate, deoxyguanosine 5'-triphosphate and deoxycytidine 5'-triphosphate, thereby degrading the pyrophosphoric acid contained in the solution;

a second step of removing or inactivating the pyrophosphates in each of the solutions after the first step;

a third step of extending a DNA primer hybridized to a target nucleic acid via a complementary binding, by using DNA polymerase and at least one of the solutions obtained in said second step, converting pyrophosphoric acid, generated during the extension reaction, into adenosine 5'-triphosphate in presence of adenosine 5'-phosphosulfate and ATP sulfurylase; and

a fourth step of detecting luminescence caused by chemiluminescence-reaction using the adenosine 5'-triphosphate, luciferase and luciferin after the second step.

13. A method of analysis of DNA sequence according to Claim 12, wherein a second or third base from the 3' terminus of the DNA primer is substituted with a base not complementary to one base sequence of the target nucleic acid.

14. A method of analysis of DNA sequence according to Claim 12, wherein the extension reaction is conducted by repeating hybridization of the DNA primer to the target nucleic acid via degrading extended a strand produced in the extension reaction from the 5' terminus of the extended strand, using a 5'  $\rightarrow$  3' exonuclease reaction.